

[Patent claims]

We claim:

1. (Amended) A method for isolating and purifying nucleic acids and/or oligonucleotides from a biological sample, [characterized in that] said method comprising:
 - disruption of the biological sample[is disrupted,] and removal of protein components and other insoluble components [are removed,] with the fraction not containing said protein and insoluble components being a residue,
 - addition of an aqueous solution of potassium acetate [is added] to the residue and removal of non-soluble components [are removed],
 - mixing and incubation of the potassium acetate-containing solution [is mixed and incubated] with an alcoholic solution containing a detergent,
 - obtaining the supernatant [obtained is] and contacting and incubating said supernatant [contacted and incubated] with a silica gel-like support material, and
 - isolating the purified nucleic acids and/or oligonucleotides [are isolated] from the soluble fraction.
2. (Amended) The method as claimed in claim 1, wherein [characterized in that] the alcoholic solution is a mixture of isopropanol with an ionic detergent.
3. (Amended) The method as claimed in claim 1 [or 2], wherein [characterized in that] the alcoholic solution contains one or more ionic detergents at a concentration of 0.5 to 10%

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(w/v) in 100% strength alcohol.

4. (Amended) The method as claimed in claim 1, [any of claims 1 to 3,] wherein [characterized in that] an aqueous solution containing 1 to 6 M potassium acetate is used.
5. (Amended) The method as claimed in claim 4, wherein [characterized in that] the aqueous solution contains 2 to 4 M potassium acetate.
6. (Amended) The method as claimed in claim 1, [any of claims 1 to 5,] wherein [characterized in that] the silica gel-like support material used is a suspension of silicon dioxide.
7. (Amended) The method as claimed in claim 1, [any of claims 1 to 6,] wherein [characterized in that] the silica gel-like support material is [rewashed] washed at least once with acetone.
8. (Amended) The method as claimed in claim 1, [any of claims 1 to 7,] wherein [characterized in that] plasmid DNA with an endotoxin content of less than 100 U/ μ g is obtained.
9. (Amended) The method as claimed in claim 8, wherein [characterized in that] the endotoxin content is not more than 10 U/ μ g of plasmid DNA.
10. (Amended) A nucleic acid or oligonucleotide comprising [an endotoxin-free nucleic acid or oligonucleotide or] a nucleic acid or oligonucleotide with reduced endotoxin content obtainable according to a method as claimed in any of claims 1 to 9.
11. (Amended) A method of using [The use of] nucleic acids and/or oligonucleotides [obtained according to any of the

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methods as claimed in any of claims 1 to 9 for] comprising
transfecting eukaryotic or prokaryotic cells, wherein the
nucleic acids and/or oligonucleotides are obtained according
to any one of the methods claimed in claims 1 to 9.

12. (Amended) A method of using [The use of] nucleic acids
and/or oligonucleotides [obtained according to any of the
methods as claimed in any of claims 1 to 9 for] comprising
producing an agent for the treatment of genetic disorders,
wherein the nucleic acids and/or oligonucleotides are
obtained according to any one of the methods claimed in
claims 1 to 9.
13. (Amended) A kit [composition] comprising the following
components:
- at least one solution suitable for the disruption of a
biological sample,
 - an aqueous potassium acetate solution,
 - a solution of detergent/alcohol, and
 - a silica gel-like support material.
14. (Amended) The kit [composition] as claimed in claim 13,
wherein [characterized in that] the [following] components
are [included]:
- a solution suitable for alkaline lysis of biological
sample material,
 - a salt solution containing 1 to 6 M potassium acetate,
 - an alcoholic solution containing 0.5 to 10% (w/v) SDS in
100% strength isopropanol and
 - a silica gel-like support material.
15. (Amended) The kit [composition] as claimed in claim 13 [or
14], characterized in that the support material included is
a suspension of silicon dioxide.

16. (Amended) A method of [The use of potassium acetate for] isolating, purifying and/or separating [endotoxin-free nucleic acids and/or oligonucleotides or] nucleic acids and/or oligonucleotides comprising mixing a pre-purified biological sample lysate with potassium acetate, wherein such method results in the isolation, purification and/or separation of nucleic acids and/or oligonucleotides with reduced endotoxin content when compared to [from and of, respectively, a] the pre-purified biological sample.

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We claim:

1. A method for isolating and purifying nucleic acids and/or oligonucleotides from a biological sample, said method comprising:
 - disruption of the biological sample and removal of protein components and other insoluble components with the fraction not containing said protein and insoluble components being a residue,
 - addition of an aqueous solution of potassium acetate to the residue and removal of non-soluble components,
 - mixing and incubation of the potassium acetate-containing solution with an alcoholic solution containing a detergent,
 - obtaining the supernatant and contacting and incubating said supernatant with a silica gel-like support material, and
 - isolating the purified nucleic acids and/or oligonucleotides from the soluble fraction.
2. The method as claimed in claim 1, wherein the alcoholic solution is a mixture of isopropanol with an ionic detergent.
3. The method as claimed in claim 1, wherein the alcoholic solution contains one or more ionic detergents at a concentration of 0.5 to 10% (w/v) in 100% strength alcohol.
4. The method as claimed in claim 1, wherein an aqueous solution containing 1 to 6 M potassium acetate is used.

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5. The method as claimed in claim 4, wherein the aqueous solution contains 2 to 4 M potassium acetate.
6. The method as claimed in claim 1, wherein the silica gel-like support material used is a suspension of silicon dioxide.
7. The method as claimed in claim 1, wherein the silica gel-like support material is washed at least once with acetone.
8. The method as claimed in claim 1, wherein plasmid DNA with an endotoxin content of less than 100 U/ μ g is obtained.
9. The method as claimed in claim 8, wherein the endotoxin content is not more than 10 U/ μ g of plasmid DNA.
10. A nucleic acid or oligonucleotide comprising a nucleic acid or oligonucleotide with reduced endotoxin content obtainable according to a method as claimed in any of claims 1 to 9.
11. A method of using nucleic acids and/or oligonucleotides comprising transfecting eukaryotic or prokaryotic cells, wherein the nucleic acids and/or oligonucleotides are obtained according to any one of the methods claimed in claims 1 to 9.
12. A method of using nucleic acids and/or oligonucleotides comprising producing an agent for the treatment of genetic disorders, wherein the nucleic acids and/or oligonucleotides are obtained according to any one of the methods claimed in claims 1 to 9.
13. A kit comprising the following components:
- at least one solution suitable for the disruption of a

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biological sample,

- an aqueous potassium acetate solution,
- a solution of detergent/alcohol, and
- a silica gel-like support material.

14. The kit as claimed in claim 13, wherein the components are:

- a solution suitable for alkaline lysis of biological sample material,
- a salt solution containing 1 to 6 M potassium acetate,
- an alcoholic solution containing 0.5 to 10% (w/v) SDS in 100% strength isopropanol and
- a silica gel-like support material.

15. The kit as claimed in claim 13, characterized in that the support material included is a suspension of silicon dioxide.

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16. A method of isolating, purifying and/or separating nucleic acids and/or oligonucleotides comprising mixing a pre-purified biological sample lysate with potassium acetate, wherein such method results in the isolation, purification and/or separation of nucleic acids and/or oligonucleotides with reduced endotoxin content when compared to the pre-purified biological sample.

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